



*I don't have one particular subject for this month's issue, but instead a gentle reminder of several simple things. Just a list of pesky issues that keep popping up on a regular basis.*

*These are things that should not be popping up.*

*...but in the spirit of the season we'll just call them stocking stuffers.*

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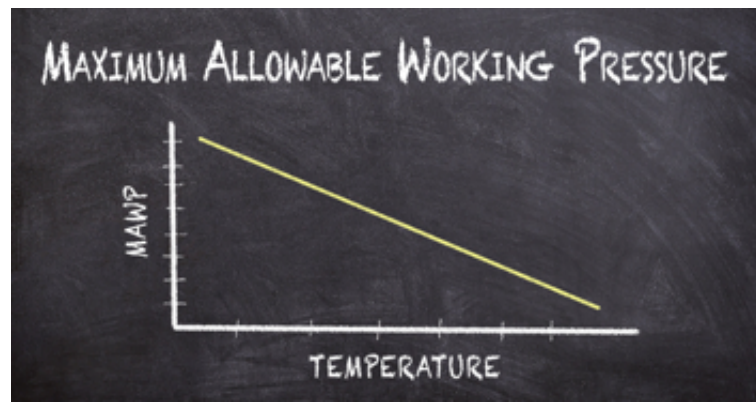
## **Pumps Have Boundaries**

Pressure and temperature boundaries are the most common violations we see in this boundary category. Don't forget that pump suction pressure is part of the overall discharge pressure calculation.

$$\text{Suction Pressure} + \text{Differential Pressure} = \text{Discharge Pressure}$$

**Note:** Allowable pressure

limits decrease with increasing temperature and not all materials have the same ratings.



If there is any doubt please consult with us. We can send you a rating chart for both 150 and 300 class flange ratings.

*Do not get a ticket from the boundary police.*

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## Pumps are not “Plug and Play”

I repeat this message ~~annually~~... no, monthly. No matter the manufacturer; the majority of all pumps do **NOT** come from the factory ready to start up.

The pump will require **oil** to be added to the bearing housings.

The **impeller clearance** must be determined and set for the fluid temperature. The direction of rotation should be ascertained and matched to the phase rotation on the motor driver (you must do this step with the coupling removed).



The driver will need to be **aligned** to the pump. When I tell people that they should align their pump nine times, I get some funny looks, but [allow me to explain](#). Yes, the alignment may have been performed in the factory, but the very second the unit was moved for transport the alignment was lost. You will need to recheck the alignment when the unit is installed and leveled, again when the base is grouted, again after the piping is installed and again after the pump has been running up to temp.

The **mechanical seal** will need to be set after the above steps are completed.

Finally... please understand that most manufacturers do not install the coupling at the factory because it will just need to be removed for all the above reasons.

Be ready to complete these items, so you look like a pump professional.

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## Pump Testing



It shows that our client/customer base is becoming more sophisticated; because we see an increase in requests for performance tests. Testing is a great opportunity for us to exhibit our integrity and professionalism when our pumps are subsequently proven to meet the published performance data.

If the customer requires pump performance testing, the specific pump test and consequently the acceptable tolerances must be defined. The industry standard specification for our pumps is ANSI/Hydraulic institute 14.6-2011. But note, even within that 75 page specification there are numerous variables, detailed options and tolerance classes that remain to be defined.

The time to have the test, the delivery schedule and the subsequent costs defined is **before** the order is placed.

*Jim Elsey*

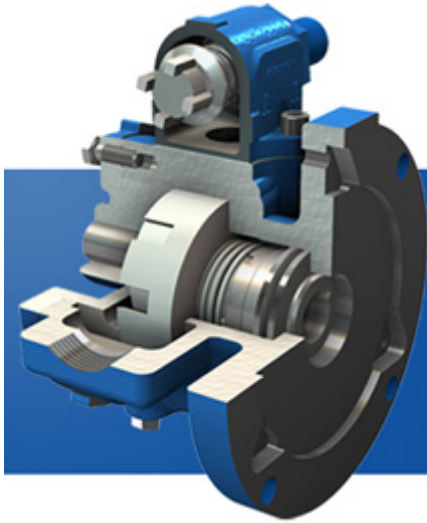
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